UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

		Application No.	Applicant(s)
Office Action Summary		10/037,168	SHIN ET AL.
		Examiner	Art Unit
		Steven HD Nguyen	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 May 2006</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-36</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-36</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2.   Claims 1-36 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. the recite "wherein the compensation is not based on a transmit clock transmitted by the transmitting device" of claims 1, 17 and 27 is new matter because in the specification of pages 4-5, Para. [0073], page 6, Para. [0084], page 16, Para. [0151], page 18, Para. [0166], pages 19-20, Para. [0172], [0179] and [0181] to [0184] disclose a method and system for inserting and removing the special symbols to compensate for variations in transmitting and receiving clocks. So the inserting and removing the special symbols are based on the clocks.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Richmond (US

20020041650, Provisional Application 60/217520).

Regarding claim 1, Richmond discloses a method in a receiving device for compensating

for differences in clock frequencies between a transmitting device and the receiving device (Fig

1) the method comprising receiving a stream of symbols transmitted serially from the

transmitting device (Fig 3, ref 28); identifying variable length groups of bits from the received

stream along with an indication of whether the number of bits in the group represents an overrun

or an under-run of bits (Fig 3, Ref 80); tracking whether an overrun or under-run criterion is

satisfied based on the identified variable length groups of bits (Fig 3, ref 52 by comparing the

different between the receiving and transmitting address in order to detect over-run or under-

run); and upon detection of an out-of-band symbol, removing the out-of-band symbol from the

stream of symbols when the overrun criterion is satisfied; and inserting an additional out-of-

band symbol into the stream when the under-run criterion is satisfied (Fig 3, Ref 52 and Fig 5 for

deleting the primitive based, See page 1, Sec 9 and Provisional application Pages 1-2) and

wherein the compensation is not based on a transmit clock transmitted by the transmitting device

(Fig 3).

Regarding claim 2, Richmond discloses the tracking includes transferring the identified

group of bits to a first-in-first-out bit buffer and maintaining a start-of-symbol pointer to indicate

a starting bit of a symbol within the bit buffer (Fig 3, Ref 80 and Figs 6c and 7).

Regarding claim 3, Richmond discloses the tracking includes upon detecting a

synchronization symbol setting the start-of-symbol pointer to point to the start of the

synchronization symbol (Fig 3, Ref 52 and Fig 5).

Regarding claim 4, Richmond discloses the tracking includes moving the start-of-symbol pointer to an earlier received bit when an overrun of bits is indicated and moving the start-of-symbol pointer to later received bit when an under-run of bits is indicated (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 5, Richmond discloses the under-run criterion is satisfied when the start-of-symbol pointer is moved past a certain bit position within the bit buffer (Fig 3, Ref 52 and Fig 5 for inserting or deleting).

Regarding claim 6, Richmond discloses the overrun criterion is satisfied when the start-of-symbol pointer is moved before a certain bit position with the bit buffer (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 7, Richmond discloses the removing of an out-of-band symbol includes moving the start-of-symbol pointer to after the detected out-of-band symbol (Fig 2 for inserting or deleting primitives and Figs 6c and 7).

Regarding claim 8, Richmond discloses the inserting of an out-of-band symbol includes moving the start-of-symbol pointer a number of bit positions before the current start-of-symbol pointer and adding an out-of-band symbol at the start-of-symbol pointer, the number of bit positions moved being equal to the number of bits in a symbol (Fig 3, Ref 52 and Fig 5 for inserting or deleting the primitives as Fig 2 and Figs 6c and 7).

Regarding claim 9, Richmond discloses including extracting a symbol starting at the bit pointed to by the start-of-symbol pointer (Fig 3, ref 52 for outputting a read address for reading the data from the buffer output link and Figs 6c and 7).

Regarding claim 10, Richmond discloses the detected out-of-band symbol is part of a primitive (Fig 3, ref 80).

Regarding claim 11, Richmond discloses the inserting inserts of copy of the detected out-of-band symbol (Fig 3, ref 52 for inserting primitives).

Regarding claim 12, Richmond discloses the primitive includes two out-of-band symbols (Fig 2, two primitives, aligning).

Regarding claim 13, Richmond discloses the inserting includes inserting a copy of the first of the two out-of-band symbols

Regarding claim 14, Richmond discloses the removing includes removing the first of the two out-of-band symbols (Fig 3, Ref 52). .

Regarding claim 15, Richmond discloses wherein the primitive is a control primitive (Fig 3, Ref 80).

Regarding claim 16, Richmond discloses the primitive is synchronization primitive (Fig 3, Ref 80).

Regarding claim 17, Richmond discloses a method in a receiving device for maintaining synchronization between the receiving device with a transmitting device (Fig 2) comprising receiving variable length groups of bits from a received stream of bits of symbols along with an indication of whether the number of bits in the group represents an overrun or an under-run of bits (Fig 3, Ref 28 for receiving a bit stream and Ref 52 for receiving an indicator of overrun or underrun); tracking whether an overrun or under-run criterion is satisfied based on the received variable length groups of bits (Ref 52 for tracking if overrun or under-run is OK or not and Fig 5); and upon receiving a symbol of a certain type, adjusting synchronization based on whether

the overrun or under-run condition is satisfied (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of

Provisional application) and wherein the compensation is not based on a transmit clock

transmitted by the transmitting device (Fig 3).

Regarding claim 18, Richmond discloses the certain type of symbol is an out-of-band

symbol (Fig 3, Ref 80).

Regarding claim 19, Richmond discloses the adjusting of the synchronization includes

removing the received symbol of the certain type from the stream when the overrun criterion is

satisfied and inserting an additional symbol of the certain type into the stream when the under-

run criterion is satisfied (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 20, Richmond discloses the tracking includes transferring the received

group of bits to a first-in-first-out bit buffer and maintaining a start-of-symbol pointer to indicate

a starting bit of a symbol within the bit buffer (Fig 3 and Figs 6c and 7).

Regarding claim 21, Richmond discloses the tracking includes upon detecting a

synchronization symbol setting the start-of-symbol pointer to point to the start of the

synchronization symbol (Fig 3, Ref 52 and Figs 5, 6c and 7).

Regarding claim 22, Richmond discloses the tracking includes moving the start-of-

symbol pointer to an earlier received bit when an overrun of bits is indicated and moving the

start-of-symbol pointer to later received bit when an under-run of bits is indicated (Fig 3, Ref 52

and Fig 5 for inserting or deleting).

Regarding claim 23, Richmond discloses the under-run criterion is satisfied when the

start-of-symbol pointer is moved past a certain bit position within the bit buffer (Fig 3, Ref 52

and Fig 5 for inserting or deleting)..

Regarding claim 24, Richmond discloses the overrun criterion is satisfied when the start-of-symbol pointer is moved before a certain bit position with the bit buffer (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 25, Richmond discloses the adjusting includes removing of the symbol of the certain type by moving the start-of-symbol pointer to after the out-of-band symbol when an overrun condition is satisfied (Fig 3, Ref 52 and Fig 5 for inserting or deleting)..

Regarding claim 26, Richmond discloses the adjusting includes inserting of a symbol by moving the start-of-symbol pointer a number of bit positions before the current start-of-symbol pointer and adding a symbol of the certain type at the start-of-symbol pointer, the number of bit positions moved being equal to the number of bits in a symbol, when an under-run condition is satisfied (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 27, Richmond discloses an aligner in a receiving device that maintains symbol alignment between the receiving device with a transmitting device (Fig 2) comprising a detecting component that detects whether the clock frequency of the transmitting device is faster or slower than the clock frequency of the receiving device based on variable length groups of bits received from the transmitting device as part of a stream of bits of symbols (Fig 3, ref 52 and Page 1, Sec [0009]); and an adjusting component that adjusts alignment based on whether the clock frequency of the transmitting device is faster or slower than the clock frequency of the receiving device (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application) and wherein the compensation is not based on a transmit clock transmitted by the transmitting device (Fig 3).

Regarding claim 28, Richmond discloses the number of bits in the variable length groups of bits indicates whether the clock frequency of the transmitting device is faster or slower than the clock frequency of the receiving device (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 29, Richmond discloses the adjusting component removes a received symbol of a certain type from the stream when the clock frequency of the transmitting device is faster that the clock frequency of the receiving device and inserts an additional symbol of a certain type into the stream when the clock frequency of the transmitting device is slower than the clock frequency of the receiving device (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 30, Richmond discloses a bit buffer (Fig 2, Ref 24) containing recently received variable length groups of bits and wherein the adjusting component (Fig 3, Ref 52) moves forward a start-of-symbol pointer into the bit buffer one bit position when the number of bits in the variable length group of bits indicates that the clock frequency of the transmitting device is slower than the clock frequency of the receiving device and moves backwards the start-of-symbol pointer into the bit buffer one bit position when the number of bits in the variable length group of bits indicates that the clock frequency of the transmitting device is faster than the clock frequency of the receiving device (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 31, Richmond discloses the adjusting component moves backward the start-of-symbol pointer one symbol position when the start-of-symbol pointer has moved forward past a certain bit position and moves forward one symbol position the start-of-symbol pointer

when the start-of-symbol pointer has moved backward past a certain bit position (Fig 3, Ref 52

and Fig 5 for inserting or deleting).

Regarding claim 32, Richmond discloses the moving backward and moving forward of

the start-of-symbol pointer one symbol position occurs upon receiving a symbol of a certain type

(Fig 3, Ref 52 and Fig 5 for inserting or deleting).

Regarding claim 33, Richmond discloses the symbol of the certain type is an out-of-band

symbol (Fig 3, Ref 80).

Regarding claim 34, Richmond discloses the symbol of the certain type is a symbol of a

primitive (Fig 3, Ref 80).

Regarding claim 35, Richmond discloses the moving backward of the start-of-symbol

pointer one symbol position includes inserting a symbol into the stream of symbols and the

moving forward of the start-of-symbol pointer one symbol position removing a symbol from the

stream of symbols (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 36, Richmond discloses a synchronization component that detects a

synchronization symbol in the stream of symbols and sets a start-of-symbol pointer to point to

the start of the synchronization symbol (Fig 3, ref 80 and Fig 2 for detecting sync primitive and

Figs 6c and 7).

Response to Arguments

5.   Applicant's arguments filed 5/1/06 have been fully considered but they are not

persuasive.

The applicant states that Richmond fails to disclose a method and system for looking for

number of group of bits in the received stream in order to determine an overrun or underrun

condition based on the indication of non essential primitives. In reply, Richmond discloses a

method and system for looking for number of group of bits in the received stream in order to

determine an overrun or underrun condition based on the indication of non essential primitives

(Fig 3, Ref 80 used to identify the groups number of group of bits in the received stream in order

to determine an overrun or underrun bits in order to determine the overrun or underrun condition

and inform this information to Ref 52).

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (571) 272-3159. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven HD Nguyen
Primary Examiner
Art Unit 2616
December 4, 2006